Vatican
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Solar panels are seen from the roof of the Paul VI audience hall at the Vatican in this Novemb

Solar panels are seen from the roof of the Paul VI audience hall at the Vatican in this November 2008 photo. (CNS/Reuters/Tony Gentile)



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October 16, 2025
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The Vatican aims to eliminate more than a quarter of greenhouse gas emissions it produces over the next decade, according to plans it has submitted to the United Nations.

The Holy See filed the climate commitment in September as part of its obligation as a party to the Paris Agreement. The 2015 international deal holds countries to take steps to slash heat-trapping emissions, like carbon dioxide and methane gases, released primarily from burning fossil fuels, and are the primary cause of climate change.

The Paris climate accord requires countries to submit new emissions-reduction plans — called "nationally determined contributions" (NDCs) — every five years toward meeting its chief goal of limiting global warming to no more than 1.5 degrees Celsius (2.7 degrees Fahrenheit).

Surpassing that threshold, scientists say, will expose millions more people to dangerous climate impacts like more extreme heat waves, storms, and increased flooding and wildfires. The latest updated targets were due ahead of COP30, the U.N. climate summit in November in Belem, Brazil, near the gateway to the Amazon rainforest.

Under its new pledge, the Holy See said it will cut its emissions within the Vatican City State by at least 28% by 2035 compared to 2011 levels. A key aspect of the plan is the development of a 1,000-acre solar farm north of Rome positioned to fully meet the Vatican's electricity needs and make it the world's first carbon-neutral state. Currently, the Vatican relies almost exclusively on imports for its energy needs.

Along with reducing emissions, the Holy See said it will continue education efforts about integral ecology to foster an ecological conversion that both Popes Francis and Leo XIV described as essential to fully addressing threats posed by climate change.



Pope Leo XIV visits a field where the Vatican has planned to establish a solar farm on land surrounding the Vatican Radio shortwave transmission center at Santa Maria di Galeria outside Rome June 19. (CNS/Vatican Media)

The world's smallest country at just 109 acres and a population of 887 people, the Vatican contributes a fractional percentage — well under 100th of a percent — of cumulative global emissions. In comparison, China accounts for the largest share (25%) of present-day emissions, while the United States, the largest historical emitter, is responsible for 11% of current emissions.

"Although the Vatican City State's contribution to global emissions is negligible," the Holy See said in its climate plan, "it considers it essential to invest in quality emission-reduction projects as well as in initiatives promoting education in integral ecology, which, in addition to the mitigation of greenhouse gases, also lead to ethical and social benefits."

Musamba Mubanga, senior advocacy officer with Caritas Internationalis and a past member of Holy See delegations at U.N. climate conferences, said the Vatican

climate pledge demonstrated translating moral leadership into concrete action.

"The Vatican's action shows that even small states, guided by moral conviction rather than economic power, can lead by example and inspire others to act with similar responsibility," she said.

National climate pledges will be a key focus at COP30, the U.N. climate summit. To date, 62 of 197 countries have submitted new NDCs — among them, the U.S. under Joe Biden before he left office, though the Trump administration has moved to withdraw from the Paris accord.

If fully implemented, countries' cumulative actions would yield an average global temperature rise of 2.6 degrees C. Analyses by climate scientists have stated global emissions need to be essentially halved by 2030, and cut by 60% by 2035 compared to 2019 levels, to put the planet on a path where the 1.5 C limit remains viable.

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In 2020, Francis committed the Vatican City State to reaching net-zero emissions by 2050. The Holy See submitted its first emissions-reduction plan (20% by 2030) in May 2023, months after it formally joined the international climate pact.

Leo has continued Francis' emphasis on climate and environmental concerns articulated most fully in his encyclical "*Laudato Si*', on Care for Our Common Home" and its follow-up exhortation *Laudate Deum* on the climate crisis.

"In a world where the most vulnerable of our brothers and sisters are the first to suffer the devastating effects of climate change, deforestation and pollution, care for creation becomes an expression of our faith and humanity," Leo said in his message for the World Day of Prayer for the Care of Creation (Sept. 1), which was quoted in the Vatican climate plan.

In addition to the solar farm, the Vatican has taken steps to reduce its energy use, such as improving energy efficiency in St. Peter's Basilica and surrounding buildings. It has also increased its use of electric vehicles and constructed a "green" entrance to the Vatican Museums powered with solar panels. A solar array has been atop the Paul VI Audience Hall since 2008. In its climate plan, the Holy See said it will pursue additional programs related to energy efficiency, waste disposal and reforestation.

On education, it has opened an area in the Vatican Gardens as a playground and workshop area for children and it has invited other nations to collaborate in raising ecological awareness.

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The Holy See's latest climate pledge "reflects a step in the right direction," said David Knecht, program manager on climate justice with Fastenaktion, the Catholic aid organization in Switzerland. He also tracks national climate pledges for the Network of Catholic Climate and Environment Actors, which coordinates church action and advocacy in U.N. climate talks.

While the Vatican City State's emissions are small within its territory, Knecht said it has "an important opportunity to advance climate action at scale" through coordinating wider efforts across the global Catholic Church, through means like moving dioceses and religious communities from fossil fuels to renewable energy and promoting more sustainable land use.

"The Holy See can help animate the global Catholic community to act as a moral and practical force for ecological transformation — living the call of *Laudato Si*' to care for our common home and stand in solidarity with the poor and the planet," Knecht said.

This story appears in the **COP30 Brazil** feature series. View the full series.